



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/569,179	02/22/2006	Johan Paul Marie Gerard Linnartz	NL031056	1994
24737 7590 07/22/2008 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510				
EXAMINER HANNON, CHRISTIAN A				
ART UNIT 2618		PAPER NUMBER		
MAIL DATE 07/22/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/569,179

**Applicant(s)**LINNARTZ, JOHAN PAUL MARIE  
GERARD**Examiner**

CHRISTIAN A. HANNON

**Art Unit**

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 6-16 and 18-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-16 & 18-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 recites "the combiner" starting with the eighth word of the claim, however in the preceding claim 18 on which 19 depends, there is both a first combiner and a second combiner, therefore it is unclear to which 'combiner' the claim refers.

### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 16 is directed to non-statutory subject matter.

Claim 16 recites "A computer readable medium embodying a computer program..." however the support for this limitation in the specification on page 3, fourth paragraph states, in part, "the above objects is [sic] solved by a computer program stored on a *record carrier* or made available for download". The vague reference to a 'record carrier' renders the claim non-statutory, since a 'record carrier' could be

construed as a carrier signal or carrier wave, which are currently defined as non-statutory subject matter.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-4, 7-11, 14-16 & 18-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Raymond (US 4,969,211).

Regarding claims 1, 14 & 16, Raymond teaches a diversity receiver, method and computer readable medium comprising a first receiving branch having associated thereto a first antenna element (Figure 1, Item 4) at least a second receiving branch having associated thereto a second antenna element (Figure 1, Item 2) first means for obtaining from a first signal on the first receiving branch and a second signal on the second receiving branch a third signal representing an estimation of a spatial derivative of at least one receiving channel parameter (Figure 1, Items 10 & 12; Column 2, Lines 20-26; Column 4, Lines 10-26), second means for processing the third signal to obtain a fourth signal (Figure 1, Item 14, and corresponding output leading to correlator Item 6) third means for processing the first signal to obtain a fifth signal (Figure 1, Item 5 & corresponding output leading to correlator Item 6) and a fourth means for combining the fourth signal and the fifth signal to obtain an output signal (Figure 1, Item 6, output

leading to weighting circuit 8) wherein the third signal is used to cancel or at least reduce signal distortions that occur due to time variations of the receiving channel (Column 2, Lines 20-26; Column 4, Lines 10-26).

Regarding claim 3, Raymond teaches claim 1, wherein the first means obtain the third signal as a difference between the first signal and the second signal (As shown, figure 1 output 10 is labeled as 'delta' which is inherently known as a difference in the art).

Regarding claim 4, Raymond teaches claim 1, wherein the third signal is interpreted as a temporal derivative of the at least one receiving channel parameter, at least when the diversity receiver is moved, in the event the receiver was moved the difference output 12 of figure 1 would inherently be a 'temporal derivative' as the difference calculation would be time dependent at that instant.

Regarding claim 7, Raymond teaches claim 1, wherein the second means performs one of signal weighting, that is 'weighting' or amplifying the signal (Column 3, Lines 45-54).

Regarding claim 8, Raymond teaches claim 1, wherein the second means weights or multiplies or mixes a signal with a local oscillator (LO) signal, it is inherent that the LO signal would be chosen to minimize signal distortions as the object of the receiver is to receive, not distort signals.

Regarding claim 9, Raymond teaches claim 1, wherein the third means performs one of sampling or mixing, that is the mixer as taught by Raymond requires a 'sample' of the signal, that sample being used to mix with a LO signal.

Regarding claim 10, Raymond teaches claim 1, furthermore it is inherent that any received signal inherently has a transfer function, as Raymond teaches the processing of the signal its respective transfer function is associated therewith. With no functional circuitry claimed to transform the signal the rejection is deemed proper.

Regarding claim 11, Raymond teaches claim 1, in addition to SW2 shown in figure 1 which acts to create a virtual third 'transmit' antenna only utilizing antenna operationally defined herein as the first antenna.

Regarding claim 15, Raymond teaches claim 14, wherein the first means obtain the third signal as a difference between the first signal and the second signal, wherein the first position and the second position are equal (As shown, figure 1 output 10 is labeled as 'delta' which is inherently known as a difference in the art).

Regarding claim 18, Raymond teaches a diversity receiver comprising a first antenna configured to receive a first signal on a receiving channel (Figure 1, Item 4) a second antenna configured to receive a second signal on the receiving channel (Figure 1, Item 2) a first combiner configured to form a third signal from the first signal and the second signal (Figure 1, Items 10 & 12; Column 2, Lines 20-26; Column 4, Lines 10-26) a first processing unit configured to process the third signal to obtain a fourth signal (Figure 1, Item 14, and corresponding output leading to correlator Item 6) a second processing unit configured to process the first signal to obtain a fifth signal (Figure 1, Item 5 & corresponding output leading to correlator Item 6) and a second combiner configured to combine the fourth signal and the fifth signal to obtain an output signal (Figure 1, Items 6, 8 & 15, output leading from weighting circuit 8) wherein the third

Art Unit: 2618

signal represents an estimation of a spatial derivative of at least one receiving channel parameter and wherein the third signal is used to reduce signal distortions that occur due to time variations of the receiving channel (Column 2, Lines 20-26; Column 4, Lines 10-26).

Regarding claim 19, Raymond teaches claim 18, wherein the combiner is configured to form the third signal as a difference between the first signal and the second signal (As shown, figure 1 output 10 is labeled as 'delta' which is inherently known as a difference in the art).

Regarding claim 20, Raymond teaches claim 19, wherein the second combiner is configured to multiply the difference signal with a factor that depends on a distance between the first antenna and the second antenna (Figure 1, Items 6, 8 & 15; Column 4, Lines 10-26).

Regarding claim 21, Raymond teaches claim 19, wherein a decorrelator, weight control, is configured to decorrelator the difference signal and the third signal and compute a weighting factor for weighting the difference signal (Figure 1, Item 16; Column 4, Lines 18-26).

Regarding claim 22, Raymond teaches claim 19, further comprising a multiplier configured to multiply the difference signal with a linearly increasing ramp function (Figure 1, Item 28, path of difference signal 12 through item 14, 6, 20, 22, 24 as leakage).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 6, 12 & 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raymond.

Regarding claim 2, Raymond teaches claim 1, however fails to detail that the antennas are arranged behind each other in the direction of motion of the diversity receiver. The examiner takes *official notice* that portable or wireless transceivers are widely known in the art. Therefore it would be obvious that in the given case of a portable transceiver of Raymond, thereby making the device easier to use, that at any given time if a person or thing was causing the transceiver to move that the antennas could be behind one another in the direction of motion.

Regarding claim 6, Raymond teaches claim 1, but fails to teach explicitly how the circuit is to be fabricated. The examiner takes *official notice* that use of discrete components is widely known in the art. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to fabricate using discrete components because as the Raymond reference is silent on the exact manufacturing process one of ordinary skill in the art would have been motivated to use any art-recognized equivalent fabrication process such as the process known to make a circuit using discrete components.



Regarding claim 12, Raymond teaches claim 1, but fails to explicitly teach that the first antenna and the second antenna are arranged in parallel but extend in different directions. It is obvious that the antennas could be best arranged by a system designer where arranging them in parallel but in different direction was a reasonable choice to best suit the system. Therefore in the design process it would be obvious to a system designer to test this antenna position in order to exhaust the list of optimal antenna locations.

Regarding claim 13, Raymond teaches claim 1, but fails to explicitly teach that the receiver could be adapted to specifically use any one of OFDM, DAB, DVB DTTB etc. Raymond does teach that modifications may be made within the scope of the invention (Column 5, Lines 5-8). Therefore it would be obvious for a system designer when choosing a protocol to adapt a transceiver to any one of OFDM, DAB, DVB, DTTB consistent with their design goals, a goal of minimal interference (as taught by Raymond) common to them all.

### ***Response to Arguments***

8. Applicant's arguments with respect to claim 6/11/2008 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sterzer (US 5,260,711) discloses a difference in time of arrival direction finders and signal sorters.

Talwar (US 5,125,108) disclose interference cancellation system for interference signals received with differing phases.

Talwar (US 5,152,010) discloses highly directive radio receiver employing relatively small antennas.

Friedman et al (US 4,888,593) disclose time difference of arrival geo location method.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTIAN A. HANNON whose telephone number is (571)272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2618

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. A. H./  
Examiner, Art Unit 2618  
July 9, 2008

/Edward Urban/  
Supervisory Patent Examiner, Art Unit 2618